

Figure 1

- 22

beta-blocker, a calcium channel blocker, a dye or stain to mark the nipple surface excluding ductal orifices, a dye or stain to mark a perimeter of a ductal orifice, and a dye or stain to mark a ductal orifice.

- 5 4. A method of preparing a breast duct for access and ductal fluid collection comprising:

contacting a ductal orifice with a tip of a ductal access tool coated with a composition comprising one or more of an anesthetic, a detergent, an exfoliating agent, an antiseptic agent, a dekeratinizing agent, an orifice-dilating agent, a vaso-dilator, a muscle-relaxing agent, a muscle-constricting agent, a lactation-stimulating agent, a secretion-stimulating agent, a sphincter-relaxer, an anti-ischemic agent, a beta-blocker, a calcium channel blocker, a dye or stain to mark the nipple surface excluding ductal orifices, a dye or stain to mark a perimeter of a ductal orifice, and a dye or stain to mark a ductal orifice; and
10
15 infusing a solution comprising an anesthetic into the duct through a lumen of the ductal access tool.

5. A method of preparing a breast duct for access and ductal fluid collection comprising infusing a solution comprising an anesthetic and one or more of an
20 oncotic agent, an osmotic agent, oxytocin, prolactin, a ductal orifice-dilating agent, a vaso-dilator, a vaso-constricter, a muscle-relaxant, a muscle-constricter, an anti-ischemic agent, a beta-blocker, a calcium channel blocker, a dye or stain to mark the nipple surface excluding ductal orifices, a dye or stain to mark a perimeter of a ductal orifice, and a dye or stain to mark a ductal orifice.

25

6. A system comprising:
an aliquot of a bioactive composition comprising a mixture of one or more of an anesthetic, a detergent, an exfoliating agent, an antiseptic agent, a dekeratinizing agent, an orifice-dilating agent, a vaso-dilator, a muscle-relaxing agent, a muscle-constricting agent, a lactation-stimulating agent, a secretion-stimulating agent, a
30 sphincter-relaxer, an anti-ischemic agent, a beta-blocker, a calcium channel blocker,

FOIA b 7 - D

a dye or stain to mark the nipple surface excluding ductal orifices, a dye or stain to mark a perimeter of a ductal orifice, and a dye or stain to mark a ductal orifice, in a formulation to contact a nipple surface.

- 5 7. A system of claim 6, wherein the formulation comprises a powder, a viscous semi-liquid, a foam, a gel, a liquid, or a gas.
8. A system as in claim 6, further comprising a pad of a geometry to circumscribe a breast nipple to enclose a bioactive agent in contact with a nipple surface and cover
10 the nipple surface for sufficient time for the bioactive agent to act on the nipple surface.
9. A system comprising a ductal access tool and a composition of a formulation capable of coating a tip of the tool to contact a ductal orifice, said composition
15 comprising one or more of an anesthetic, a detergent, an exfoliating agent, an antiseptic agent, a dekeratinizing agent, an orifice-dilating agent, a vaso-dilator, a muscle-relaxing agent, a muscle-constricting agent, a lactation-stimulating agent, a secretion-stimulating agent, a sphincter-relaxer, an anti-ischemic agent, a beta-blocker, a calcium channel blocker, a dye or stain to mark the nipple surface
20 excluding ductal orifices, a dye or stain to mark a perimeter of a ductal orifice, and a dye or stain to mark a ductal orifice.
10. A system comprising a ductal access tool preloaded with a solution comprising an anesthetic for infusion into an accessed breast duct and a composition of a
25 formulation capable of coating a tip of the tool comprising one or more of an anesthetic, a detergent, an exfoliating agent, an antiseptic agent, a dekeratinizing agent, an orifice-dilating agent, a vaso-dilator, a muscle-relaxing agent, a muscle-constricting agent, a lactation-stimulating agent, a secretion-stimulating agent, a sphincter-relaxer, an anti-ischemic agent, a beta-blocker, a calcium channel blocker,
30 a dye or stain to mark the nipple surface excluding ductal orifices, a dye or stain to mark a perimeter of a ductal orifice, and a dye or stain to mark a ductal orifice.

11. A method of preparing a patient for a breast duct fluid collection comprising one or more of applying acupuncture, directing meditation, playing music, applying heat to the breast, warming a room where the patient waits, warming a table or chair where the patient lies or sits, covering the patient with a warm blanket.